Claims

1. A method for locating mobile terminals in a mobile network, the method comprising the steps of:

> receiving location-dependent parameter sets, each parameter set to include at least one parameter indicative of the location of an individual mobile terminal;
>
> on the basis of the parameter sets, forming a transition network comprising nodes interconnected by links, wherein (1) an individual node represents a parameter set having a given parameter content, (2) a link connecting two neighboring nodes represents a transition between two successive estimated locations of a mobile terminal, and (3) the node coordinates relate to a certain location;
>
> adjusting the coordinates of a node responsive to coordinates of neighboring nodes directly connected to said node through a link, whereby said adjusting is performed for at least some of the nodes of the transition network;
>
> for a selected set of nodes, limiting movement of the node within the transition network and
>
> using the coordinates of the node representing a parameter set received to indicate a location estimate for said parameter set.

2. The method as defined in claim 1, wherein the forming step includes forming a single node representative of a plurality of parameter sets wherein the terminal coordinates indicated by said parameter sets having a relative displacement smaller than a predetermined limit. .

3. The method as defined in claim 1, wherein the forming step further comprises:

> linking between successive locations of one mobile terminal, whereby the nodes and links identifying said locations represent a path traveled by said one mobile terminal; and
>
> linking a plurality of paths to each other at nodes which represent parameter sets with being indicative of locations having a relative displacement smaller that a predetermined limit.

4. The method as defined in claim 1, wherein the adjusting step is performed for a selected set of nodes of the transition network.

5. The method as defined in claim 1, further comprising:

- performing said adjusting step for a selected set of nodes of the transition network;
- monitoring the movements of the nodes during the adjusting step; and,
- repeating said adjusting step until the displacement of the nodes fulfills a predetermined condition.

6. The method as defined in claim 5, wherein said adjusting step is repeated until the largest displacement experienced by an individual node is below a preset threshold value.

7. The method as defined in claim 1, wherein the limiting step includes updating positions obtained in said adjusting step, whereby the updated positions are used for finding the location estimate.

8. The method as defined in claim 1, wherein the limiting step includes keeping at least one of the nodes in a fixed position.

9. The method as defined in claim 3, wherein in the adjusting step, the neighboring nodes are adapted to effect the position of a node in a manner which is dependent on the path to which the neighboring nodes belong.

10. The method as defined in claim 2, wherein the adjusting step further comprises:

    calculating the center of gravity of the neighboring nodes and
    moving the node to the center of gravity obtained in the calculating step.

11. The method as defined in claim 3, wherein the adjusting step further comprises:

    calculating the center of gravity of the neighboring nodes, the center of gravity being calculated for each of the nodes representing the same parameter set; and,
    said using step includes determining the center of gravity for the centers of gravity obtained in the calculation of the adjusting step, whereby the center of gravity obtained in the determining step is used to indicate the location estimate for said parameter set.

12. A system for locating mobile terminals in a mobile network, the system comprising:

first means for receiving parameter sets, each parameter set comprising at least one parameter indicative of the location of an individual mobile terminal,

second means for finding a location estimate for a parameter set received, the location estimate indicating the location of the respective mobile terminal,

third means for forming a transition network on the basis of the parameter sets, the transition network comprising nodes interconnected by links, whereby (1) an individual node represents a parameter set having a given parameter content, (2) a link connecting two neighboring nodes represents a transition between two successive locations of a mobile terminal, and (3) the node coordinates relate to a certain location,

fourth means for adjusting the coordinates of a node by means of the coordinates of the nodes directly connected to said node through a link, and

fifth means for limiting the movement of at least one of the nodes within the transition network,

wherein the second means are adapted to use the coordinates of the node representing a received parameter set to indicate the location estimate for said parameter set.

13. A computer readable media containing software that when executed by a computer will cause said computer to substantially perform the steps of claim 1.